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## NOTICE OF ALLOWANCE AND FEE(S) DUE

959 7590 01/27/2009

LAHIVE & COCKFIELD, LLP  
FLOOR 30, SUITE 3000  
ONE POST OFFICE SQUARE  
BOSTON, MA 02109

EXAMINER

RUTHKOSKY, MARK

ART UNIT

PAPER NUMBER

1795

DATE MAILED: 01/27/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,065	11/14/2003	Tatsuya Sugawara	SIW-069RCE2	1411

TITLE OF INVENTION: FUEL CELL SYSTEM PROGRAMMED TO CONTROL REACTANT GAS FLOW IN A GAS CIRCULATION PATH

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	04/27/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

### HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail Stop ISSUE FEE**  
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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

959 7590 01/27/2009

**LAHIVE & COCKFIELD, LLP**  
**FLOOR 30, SUITE 3000**  
**ONE POST OFFICE SQUARE**  
**BOSTON, MA 02109**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

### Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or by facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,065	11/14/2003	Tatsuya Sugawara	SIW-069RCE2	1411

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	04/27/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
RUTHKOSKY, MARK	1795	429-022000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).	2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
<input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.	1_____
<input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b>	2_____

**3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)**

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted:	4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)
<input type="checkbox"/> Issue Fee	<input type="checkbox"/> A check is enclosed.
<input type="checkbox"/> Publication Fee (No small entity discount permitted)	<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.
<input type="checkbox"/> Advance Order - # of Copies _____	<input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)	<input type="checkbox"/> a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.	<input type="checkbox"/> b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).
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NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS; SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/714,065	11/14/2003	Tatsuya Sugawara	SIW-069RCE2	1411
959	7590	61/27/2009		EXAMINER
LAHIVE & COCKFIELD, LLP FLOOR 30, SUITE 3000 ONE POST OFFICE SQUARE BOSTON, MA 02109				RUTHKOSKY, MARK
		ART UNIT 1795		PAPER NUMBER
DATE MAILED: 01/27/2009				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 684 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 684 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/714,065	SUGAWARA ET AL.	
	<b>Examiner</b>	Art Unit	
	Mark Ruthkosky	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- This communication is responsive to 11/4/2008.
- The allowed claim(s) is/are 1-4 10.
- Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - All
  - Some\*
  - None
 of the:
  - Certified copies of the priority documents have been received.
  - Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 \* Certified copies not received: \_\_\_\_\_.
- A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
- CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - including changes required by the Notice of Draftperson's Patent Drawing Review ( PTO-948) attached 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
 Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- Notice of References Cited (PTO-892)
- Notice of Draftperson's Patent Drawing Review (PTO-948)
- Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_.
- Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
- Notice of Informal Patent Application
- Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
- Examiner's Amendment/Comment
- Examiner's Statement of Reasons for Allowance
- Other \_\_\_\_\_.

/Mark Ruthkosky/  
Primary Examiner, Art Unit 1795

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/4/2008 has been entered.

***Claim Rejections - 35 USC § 103***

The rejection of claims 1-4 and 10 under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (US 2002/0136942) in view of Kobayashi et al. (JP2002-33110A) has been overcome by applicant's amendment to the claims.

***Examiner's Amendment***

An examiner's amendment to the record appears below. The amendment cancels non-elected claims in order to advance the prosecuted claims to allowance. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Cancel claims 5-8.

***Allowable Subject Matter***

Claims 1-4 and 10 are allowed.

The following is an examiner's statement of reasons for allowance:

The instant claims are to a fuel cell system comprising a fuel cell for generating power by being supplied with a fuel gas and an oxidizing gas; a fuel gas supply path for supplying a fuel gas to the fuel cell; a fuel off-gas circulation path for returning a fuel off-gas discharged from the fuel cell to the fuel gas supply path; an ejector, provided in the fuel gas supply path and driven by fluid flow energy, for supplying the fuel off-gas in the fuel off-gas circulation path flow to the fuel gas supply path; a fuel pump, provided in the fuel off-gas circulation path or on the fuel gas supply path and downstream with respect to the ejector, and driven by a rotating machine, for pressurizing the fuel off-gas; a discharge valve for discharging the fuel off-gas from the fuel off-gas circulation path; and a control device programmed to close the discharge valve and operate the fuel pump upon start-up of the fuel cell.

The prior art does not teach a fuel cell system, as claimed, including a fuel pump provided in the fuel off-gas circulation path or on the fuel gas supply path and downstream with respect to the claimed ejector, and driven by a rotating machine, for pressurizing the fuel off-gas; a discharge valve for discharging the fuel off-gas from the fuel off-gas circulation path; and a control device programmed to close the discharge valve and operate the fuel pump upon start-up of the fuel cell.

The most pertinent prior art has been noted. For example, Kashiwagi (US 2002 /0136942) teaches a fuel cell system comprising a fuel cell for generating power by being

supplied with a fuel gas and an oxidizing gas; a fuel gas supply path for supplying a fuel gas to the fuel cell; a fuel off-gas circulation path for returning a fuel off-gas discharged from the fuel cell to the fuel gas supply path; an ejector, provided in the fuel gas supply path and driven by fluid flow energy, for supplying the fuel off-gas in the fuel off-gas circulation path flow to the fuel gas supply path; a fuel pump, provided in the fuel off-gas circulation path or on the fuel gas supply path and downstream with respect to the ejector, and driven by a rotating machine, for pressurizing the fuel off-gas (see figures 1-3 and 7, the corresponding text and the claims.) A control device is operatively connected to the fuel pump. The reference does not teach a discharge valve for discharging the fuel off-gas from the fuel off-gas circulation path or a control device operatively connected to the discharge valve. Further, the reference does not teach a voltage-measuring device.

Further, Kobayashi et al. (US 6,844,094) teaches a fuel cell system comprising a fuel cell for generating power by being supplied with a fuel gas and an oxidizing gas; a fuel gas supply path for supplying a fuel gas to the fuel cell; a fuel off-gas circulation path for returning a fuel off-gas discharged from the fuel cell to the fuel gas supply path; and an ejector, provided in the fuel gas supply path and driven by fluid flow energy, for supplying the fuel off-gas in the fuel off-gas circulation path flow to the fuel gas supply path (see figures 1-2, the claims and column 4.) The fuel cell system includes a discharge valve for discharging the fuel off-gas from the fuel off-gas circulation path and a control device operatively connected to the discharge valve (see col. 6, line 30 to col. 7, line 30.) Kobayashi does not teach a fuel cell system, as claimed, including a fuel pump provided in the fuel off-gas circulation path or on the fuel gas supply path and downstream with respect to the claimed ejector, and driven by a rotating machine, for

pressurizing the fuel off-gas; a discharge valve for discharging the fuel off-gas from the fuel off-gas circulation path; and a control device programmed to close the discharge valve and operate the fuel pump upon start-up of the fuel cell.

Because the prior art does not disclose the claimed invention or provide teachings that would lead one of ordinary skill in the art at the time the invention was made to find the invention obvious over the prior art, the claims are allowed. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Examiner Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

/Mark Ruthkosky/

Primary Examiner, Art Unit 1795